

## **Olerup SSP® HLA-B\*48**

|                                  |                                       |
|----------------------------------|---------------------------------------|
| Product number:                  | 101.546-06 – including Taq polymerase |
| Lot number:                      | 44K                                   |
| Expiry date:                     | 2012-September-01                     |
| Number of tests:                 | 6                                     |
| Number of wells per test:        | 16                                    |
| Storage - pre-aliquoted primers: | dark at -20°C                         |
| - PCR Master Mix:                | -20°C                                 |
| - Adhesive PCR seals             | RT                                    |
| - Product Insert                 | RT                                    |

**This Product Description is only valid for Lot No. 44K.**

### **CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® HLA-B\*48 LOT.**

The HLA-B\*48 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous Olerup SSP® HLA-B\*48 lot was made (**Lot No. 16G**).

The amplification patterns for some rare HLA-B\*48 alleles only differ by the length of the specific PCR products.

The primers of the wells detailed below have been added, exchanged or modified.

| Well | 5'-primer  | 3'-primer  | rationale                                                                           |
|------|------------|------------|-------------------------------------------------------------------------------------|
| 6    | Added      | Added      | Primer pairs added for the B*48:20 and B*48:21 alleles.                             |
| 10   | -          | -          | Exchanged positive control primer pair.                                             |
| 11   | Added      | -          | Primer added for the B*48:02:02 allele.                                             |
| 12   | Moved, new | Moved, new | Primer pair moved to well 14, new primer pairs for the B*48:22 and B*48:23 alleles. |
| 13   | Added      | -          | Increased yield of specific PCR product.                                            |
| 14   | Added      | Added      | Primer pair from well 12.                                                           |

## PRODUCT DESCRIPTION

### HLA-B\*48 SSP typing

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the B\*48:01 to B\*48:23 alleles.

#### PLATE LAYOUT

Each HLA-B\*48 test consists of 16 PCR reactions in a 16 well cut PCR plate.

|          |           |           |           |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>1</b> | <b>2</b>  | <b>3</b>  | <b>4</b>  | <b>5</b>  | <b>6</b>  | <b>7</b>  | <b>8</b>  |
| <b>9</b> | <b>10</b> | <b>11</b> | <b>12</b> | <b>13</b> | <b>14</b> | <b>15</b> | <b>16</b> |

The 16 well PCR plate is marked with 'HLA-B\*48' in silver/gray ink.

Well No. 1 is marked with the Lot No. '44K'.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are heat-sealed with a PCR-compatible foil.

**Please note:** When removing each 16 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

#### INTERPRETATION

The interpretation of HLA-B\*48 SSP subtypings will be influenced by the B\*07, the B\*08, most B\*13, most B\*14, many B\*15, most B\*18, eleven B\*27, most B\*35, the B\*37, the B\*38, most B\*39, the B\*40, the B\*41, the B\*42, most B\*44, most B\*45, five B\*46, the B\*49, the B\*50, most B\*51, most B\*52, the B\*53, most B\*54, most B\*55, most B\*56, most B\*57, most B\*58, the B\*59, the B\*67, the B\*73, the B\*78, the B\*81, the B\*82 and the B\*83:01 alleles when present on the other haplotype. In addition, the C\*02:23 and C\*07:38 alleles will be amplified by primer mix 5, the C\*15:24 allele will be amplified by primer mix 10, the C\*07:123 allele will be amplified by primer mix 12, the C\*06:21 and C\*15:24 alleles will be amplified by primer mix 13 and the C\*02:23 allele will be amplified by primer mix 16.

#### UNIQUELY IDENTIFIED ALLELES

All the HLA-B\*48 alleles, i.e. **B\*48:01 to B\*48:23**, recognized by the HLA Nomenclature Committee in July 2010<sup>2</sup> will be amplified by the primers in the HLA-B\*48 SSP kit<sup>1</sup>.

<sup>1</sup>The B\*48:09 and B\*48.11 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 14.

The B\*48 primer set cannot separate the B\*48:06 and B\*81:02 alleles. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B\*81 kits.

The B\*48 primer set cannot separate the B\*48:10, B\*08:17, B\*08:54 and B\*42:11 alleles. These alleles can be distinguished by the HLA-B low resolution and/or HLA-B\*08 and HLA-B\*42 kits.

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The B\*48 primer set cannot separate the B\*48:13 and the 38:03, 39:02:01-39:02:02, 39:08 and 39:13:01-39:13:02 alleles. The B\*48:13 allele can be distinguished from the B\*38:03 and B\*39:xx alleles by the HLA-B low resolution and/or HLA-B\*38/HLA-B\*39 kits. The B\*48 primer set cannot separate the B\* 48:01:01 to 48:01:03, the 48:02:01 and 48:02:02 or the B\*48:03:01 and B\*48:03:02 alleles.

<sup>2</sup>HLA-B alleles listed on the IMGT/HLA web page 2010-July-16, release 3.1.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

## RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 27 alleles generate 22 amplification patterns that can be combined in 253 homozygous and heterozygous combinations. 104 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products were not considered in these calculations.

|           |           |                                                                                             |
|-----------|-----------|---------------------------------------------------------------------------------------------|
| +++++---+ | ---+----- | *48:02:01, *48:07 = *48:02:01, *48:16                                                       |
| +++++---+ | ---+----- | *48:07, *48:23 = *48:16, *48:23 = *48:17, *48:22                                            |
| +++++---+ | ---+----- | *48:01:01, *48:17 = *48:03:01, *48:07 = *48:03:01, *48:16 = *48:07, *48:17 = *48:16, *48:17 |
| +++++---+ | ---+----- | *48:01:01, *48:23 = *48:03:01, *48:22 = *48:22, *48:23                                      |
| +++++---+ | ---+----- | *48:06, *48:20 = *48:06, *48:21                                                             |
| +++++---+ | ---+----- | *48:05, *48:07 = *48:05, *48:16                                                             |
| +++++---+ | ---+----- | *48:07, *48:20 = *48:07, *48:21 = *48:16, *48:20 = *48:16, *48:21                           |
| +++++---+ | ---+----- | *48:01:01, *48:05 = *48:05, *48:15 = *48:05, *48:19 = *48:05, *48:20                        |
| +++++---+ | ---+----- | *48:19, *48:20 = *48:19, *48:21                                                             |
| +++++---+ | ---+----- | *48:04, *48:20 = *48:04, *48:21                                                             |
| +++++---+ | ---+----- | *48:20, *48:22 = *48:21, *48:22                                                             |
| +++++---+ | ---+----- | *48:09, *48:20 = *48:09, *48:21                                                             |
| +++++---+ | ---+----- | *48:18, *48:20 = *48:18, *48:21                                                             |
| +++++---+ | ---+----- | *48:15, *48:20 = *48:15, *48:21                                                             |
| +++++---+ | ---+----- | *48:01:01, *48:20 = *48:01:01, *48:21 = *48:20, *48:20 = *48:20, *48:21                     |
| +++++---+ | ---+----- | *48:07, *48:08 = *48:08, *48:16                                                             |
| +++++---+ | ---+----- | *48:07, *48:19 = *48:16, *48:19                                                             |
| +++++---+ | ---+----- | *48:07, *48:13 = *48:13, *48:16                                                             |
| +++++---+ | ---+----- | *48:04, *48:07 = *48:04, *48:16                                                             |
| +++++---+ | ---+----- | *48:07, *48:22 = *48:16, *48:22                                                             |
| +++++---+ | ---+----- | *48:07, *48:14 = *48:14, *48:16                                                             |
| +++++---+ | ---+----- | *48:07, *48:12 = *48:12, *48:16                                                             |
| +++++---+ | ---+----- | *48:07, *48:10 = *48:10, *48:16                                                             |
| +++++---+ | ---+----- | *48:07, *48:09 = *48:09, *48:16                                                             |
| +++++---+ | ---+----- | *48:07, *48:18 = *48:16, *48:18                                                             |
| +++++---+ | ---+----- | *48:07, *48:15 = *48:15, *48:16                                                             |
| +++++---+ | ---+----- | *48:01:01, *48:07 = *48:01:01, *48:16 = *48:07, *48:07 = *48:07, *48:16                     |
| +++++---+ | ---+----- | *48:01:01, *48:08 = *48:08, *48:15 = *48:08, *48:19 = *48:15, *48:19                        |
| +++++---+ | ---+----- | *48:01:01, *48:19 = *48:19, *48:19                                                          |
| +++++---+ | ---+----- | *48:01:01, *48:22 = *48:22, *48:22                                                          |
| +++++---+ | ---+----- | *48:01:01, *48:14 = *48:09, *48:12 = *48:09, *48:14 = *48:14, *48:18                        |
| +++++---+ | ---+----- | *48:01:01, *48:12 = *48:10, *48:18 = *48:12, *48:18                                         |
| +++++---+ | ---+----- | *48:01:01, *48:09 = *48:09, *48:09                                                          |
| +++++---+ | ---+----- | *48:01:01, *48:18 = *48:18, *48:18                                                          |
| +++++---+ | ---+----- | *48:01:01, *48:15 = *48:15, *48:15                                                          |
| +++++---+ | ---+----- | *48:03:01, *48:17 = *48:17, *48:17                                                          |
| +++++---+ | ---+----- | *48:03:01, *48:23 = *48:23, *48:23                                                          |
| +++++---+ | ---+----- | *48:04, *48:10 = *48:04, *48:13                                                             |
| +++++---+ | ---+----- | *48:05, *48:05 = *48:05, *48:08 = *48:05, *48:10                                            |
| +++++---+ | ---+----- | *48:10, *48:13 = *48:13, *48:13                                                             |
| +++++---+ | ---+----- | *48:10, *48:14 = *48:12, *48:14 = *48:14, *48:14                                            |
| +++++---+ | ---+----- | *48:10, *48:12 = *48:12, *48:12                                                             |

48:01 = 48:01:01-48:01:03  
48:02 = 48:02:01-48:02:02  
48:03 = 48:03:01-48:03:02

## SPECIFICITY TABLE

### HLA-B\*48 SSP subtyping

Specificities and sizes of the PCR products of the 16 primer mixes used for HLA-B\*48 SSP subtyping

| Primer Mix             | Size of spec. PCR product <sup>1</sup> | Size of control band <sup>2</sup> | Amplified HLA-B*48 alleles <sup>3</sup>                                       | Other amplified HLA-B alleles <sup>4</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|----------------------------------------|-----------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>               | 385 bp                                 | <b>800 bp</b>                     | *48:01:01-48:05, 48:07-48:15, 48:17-48:23                                     | *08:17, 08:38, 08:54, 15:68, 38:03-38:04, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:22-39:23, 39:49, 40:01:01-40:01:12, 40:07, 40:09 <sup>?</sup> -40:11:02 <sup>?</sup> , 40:14:01 <sup>?</sup> -40:15 <sup>?</sup> , 40:16, 40:18 <sup>?</sup> -40:19 <sup>?</sup> , 40:21 <sup>?</sup> -40:22N <sup>?</sup> , 40:23, 40:24 <sup>?</sup> , 40:26 <sup>?</sup> -40:38 <sup>?</sup> , 40:42 <sup>?</sup> -40:50 <sup>?</sup> , 40:51, 40:52 <sup>?</sup> -40:58 <sup>?</sup> , 40:59-40:60, 40:61 <sup>?</sup> -40:65 <sup>?</sup> , 40:66, 40:67 <sup>?</sup> , 40:71 <sup>?</sup> , 40:72:01-40:73, 40:74 <sup>?</sup> -40:76 <sup>?</sup> , 40:77, 40:78 <sup>?</sup> , 40:79, 40:80 <sup>?</sup> -40:88 <sup>?</sup> , 40:90 <sup>?</sup> -40:93 <sup>?</sup> , 40:95 <sup>?</sup> -40:96 <sup>?</sup> , 40:98 <sup>?</sup> -40:105 <sup>?</sup> , 40:107 <sup>?</sup> -40:121 <sup>?</sup> , 40:123 <sup>?</sup> , 40:124:01, 40:124:02 <sup>?</sup> -40:137 <sup>?</sup> , 40:138-40:140, 40:141 <sup>?</sup> , 40:145 <sup>?</sup> , 40:146-40:147, 41:01-41:12, 42:11, 44:18, 45:01-45:05, 45:07-45:12, 49:01:01-49:10, 50:01:01-50:02, 50:04-50:09 |
| <b>2<sup>5,6</sup></b> | 145 bp                                 | <b>800 bp</b>                     | *48:01:01-48:01:03, 48:03:01-48:03:02, 48:06-48:07, 48:09, 48:11, 48:15-48:23 | *27:36, 40:01:01-40:01:12, 40:07, 40:10:01-40:10:02, 40:12, 40:21-40:23, 40:25, 40:30-40:31, 40:33-40:34, 40:36, 40:38, 40:42-40:43, 40:45-40:49, 40:52, 40:54-40:55, 40:59-40:61, 40:63, 40:66-40:67, 40:69, 40:73-40:74, 40:76, 40:79-40:81, 40:84, 40:87-40:88, 40:100-40:102, 40:106, 40:112-40:114, 40:116-40:118N, 40:123-40:126, 40:128, 40:132, 40:134-40:135, 40:137-40:141, 40:146-40:147, 44:31, 46:06, 81:01-81:05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>3</b>               | 175 bp                                 | <b>800 bp</b>                     | *48:01:01-48:01:03, 48:04,                                                    | *27:24, 40:31, 40:45, 40:80, 81:01-81:05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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Lot-specific information

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|          |        |                |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|--------|----------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |        |                | 48:06-48:07,<br>48:09, 48:11,<br>48:15-48:16,<br>48:18-48:20,<br>48:22 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>4</b> | 150 bp | <b>800 bp</b>  | *48:02:01-<br>48:02:02                                                 | *08:49, 13:01:01-13:01:05, 13:06-<br>13:07N, 13:12-13:13, 13:17,<br>13:20, 13:22:01-13:23, 13:25-<br>13:26, 13:28-13:29, 13:36, 13:39,<br>14:10, 15:02:01-15:02:04, 15:13,<br>15:20-15:21, 15:25:01-15:25:02,<br>15:36, 15:44, 15:62, 15:77, 15:80,<br>15:85, 15:88-15:89, 15:106,<br>15:112, 15:121, 15:139, 15:144,<br>15:154, 15:165, 15:170, 15:194,<br>18:22, 27:19, 27:30, 35:01:01:01-<br>35:04:03, 35:06-35:08:04, 35:10-<br>35:17, 35:19-35:21, 35:23-35:30,<br>35:33-35:36, 35:38-35:42:02,<br>35:45-35:50, 35:52, 35:54-35:57,<br>35:59, 35:61-35:63, 35:65Q,<br>35:69-35:71, 35:74, 35:76-35:78,<br>35:80-35:85, 35:90-35:96, 35:98,<br>35:100-35:101:02, 35:103-<br>35:113, 35:115-35:116, 35:120-<br>35:126, 35:128-35:134N, 35:136-<br>35:145N, 37:01:01-37:01:07,<br>37:03N-37:06, 37:08, 37:10-<br>37:11, 37:13-37:23, 38:20, 39:42,<br>40:28, 44:02:01:01-44:14, 44:16-<br>44:17, 44:19N, 44:21-44:30,<br>44:32-44:40, 44:42-44:46, 44:48-<br>44:52N, 44:55-44:64:02, 44:66-<br>44:98, 44:101-44:105, 44:107-<br>44:110, 51:04, 51:42, 51:46,<br>51:56, 53:01:01-53:13, 53:15-<br>53:23, 55:14, 56:09, 56:11-56:12,<br>57:01:01-57:01:04, 57:01:06-<br>57:10, 57:12, 57:14-57:20, 57:22-<br>57:30, 57:32, 58:01:01-58:01:02,<br>58:01:04-58:01:07, 58:04-58:05,<br>58:09-58:15, 58:17N, 58:19,<br>58:21-58:24, 58:28-58:30, 83:01 |
| <b>5</b> | 285 bp | <b>1070 bp</b> | *48:03:01-<br>48:03:02, 48:17,<br>48:23                                | *07:07, 07:12, 07:14, 07:18:01-<br>07:18:02, 07:77, 15:138, 18:35,<br>40:01:01-40:01:12, 40:07,<br>40:10:01-40:10:02, 40:12,<br>40:14:01-40:14:03, 40:21-40:23,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|                          |                          |         |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|--------------------------|---------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                          |         |                         | 40:25, 40:33, 40:36, 40:38,<br>40:42-40:43, 40:46-40:49, 40:52,<br>40:54-40:55, 40:59-40:63, 40:65-<br>40:67, 40:69, 40:72:01-40:74,<br>40:76-40:77, 40:79, 40:81, 40:84,<br>40:87-40:88, 40:100-40:102,<br>40:106, 40:108, 40:112-40:114,<br>40:116-40:118N, 40:121, 40:123-<br>40:126, 40:128, 40:132, 40:134-<br>40:141, 40:146-40:147, 41:08,<br>44:31, 46:06, <b>C*02:23, C*07:38</b>                                                                       |
| <b>6<sup>5,7</sup></b>   | 90 bp, 170<br>bp, 285 bp | 1070 bp | *48:05, 48:20-<br>48:21 | *27:36                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>7</b>                 | 385 bp                   | 1070 bp | *48:06                  | *07:02:01-07:12, 07:14-07:53,<br>07:55-07:64, 07:66-07:115,<br>08:01:01-08:05, 08:07-08:09,<br>08:11-08:16, 08:18-08:37, 08:39-<br>08:53, 08:55-08:62, 14:01-14:03,<br>14:05-14:18, 38:01:01-38:02:02,<br>38:05-38:23, 39:01:01:01-<br>39:01:01:02L, 39:01:03-39:01:11,<br>39:03-39:07, 39:09-39:12, 39:14-<br>39:20, 39:24-39:48, 39:50-39:60,<br>40:106 <sup>?</sup> , 42:01:01-42:02, 42:04-<br>42:10, 42:12-42:14, 67:01:01-<br>67:01:02, 73:01-73:02, 81:02 |
| <b>8<sup>5,6,8</sup></b> | 85 bp,<br>225 bp         | 1070 bp | *48:07, 48:16-<br>48:17 | *07:78, 07:115, 40:36, 40:48,<br>40:77                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>9</b>                 | 215 bp                   | 1070 bp | *48:05, 48:08,<br>48:19 | *07:02:01-07:03, 07:05:01-07:06,<br>07:08-07:11, 07:13, 07:15-07:17,<br>07:20-07:24, 07:27-07:33, 07:35-<br>07:42, 07:44, 07:46-07:47,<br>07:49N-07:51, 07:53-07:65,<br>07:67N-07:76, 07:79, 07:81-<br>07:83, 07:85-07:115, 08:20,<br>08:40, 15:07:01-15:07:02, 15:45,<br>15:68, 15:126, 35:66, 37:07,<br>40:15-40:16, 40:32, 40:98, 46:12                                                                                                                       |
| <b>10<sup>6</sup></b>    | 240 bp                   | 1070 bp | *48:04, 48:13           | *07:53, 13:01:01-13:01:02,<br>13:01:04-13:03, 13:06-13:09,<br>13:11-13:23, 13:25, 13:27-13:33,<br>13:36-13:39, 14:13, 15:09, 15:30,<br>15:42, 15:48, 15:58, 15:73, 15:83,<br>15:86, 15:150, 15:188, 18:26,<br>27:07, 27:11, 27:20, 27:24, 27:27,<br>27:33, 27:43,                                                                                                                                                                                                |

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|           |        |               |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|--------|---------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |        |               |                              | 35:02:01 <sup>W</sup> -35:02:04 <sup>W</sup> , 35:04:01-35:04:03, 35:06, 35:09:01-35:09:02, 35:12:01-35:12:02, 35:18, 35:22, 35:31, 35:44, 35:59-35:60, 35:81 <sup>W</sup> , 35:83 <sup>W</sup> , 35:88, 35:95 <sup>W</sup> , 35:129N <sup>W</sup> , 37:12, 38:01:01, 38:01:03-38:21, 38:23, 39:01:01:01-39:01:01:02L, 39:01:03-39:06:02, 39:08-39:14, 39:16, 39:18-39:20, 39:22-39:24, 39:26-39:28, 39:30-39:42, 39:44-39:48, 39:50-39:54, 39:56-39:60, 40:02:01-40:02:09, 40:02:11, 40:04-40:06:03, 40:08, 40:11:01-40:11:02, 40:13, 40:19, 40:26-40:29, 40:35, 40:37, 40:39-40:40, 40:50-40:51, 40:53, 40:56-40:58, 40:64, 40:68, 40:70-40:71, 40:75, 40:78, 40:82-40:83, 40:85-40:86, 40:90-40:97, 40:99, 40:103-40:105, 40:107, 40:109-40:111, 40:115, 40:119, 40:122, 40:127, 40:129-40:130, 40:133Q, 40:142N-40:145, 41:06, 41:09, 42:08, 42:14, 44:10, 44:14, 44:62, 44:77, 44:82, 46:11, 46:18, 51:01:01-51:02:02, 51:02:04-51:16, 51:19-51:24:03, 51:26-51:36, 51:38-51:41N, 51:43-51:44N, 51:46, 51:48-51:84, 51:86-51:89, 51:91, 51:93, 51:95, 52:01:01-52:11, 52:13-52:21, 53:19 <sup>W</sup> , 54:01-54:05N, 54:07-54:08N, 54:10-54:13, 54:17-54:23, 55:01:01-55:05, 55:07-55:13, 55:15-55:19, 55:21-55:22, 55:24-55:26, 55:28-55:40, 55:42-55:43, 56:01:01-56:02, 56:04-56:08, 56:10, 56:12-56:17, 56:19N-56:29, 57:02:01-57:03:02, 57:07, 57:09, 57:12, 57:17, 57:28N, 58:08, 58:20, 58:27-58:28, 59:01-59:05, 67:01:01-67:02, 78:01-78:07, 82:01-82:03, <b>C*15:24</b> |
| <b>11</b> | 170 bp | <b>800 bp</b> | *48:01:01-48:05, 48:07-48:23 | *07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01-15:03:03, 15:47, 15:54, 15:61-15:62, 15:64,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                           |        |         |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|--------|---------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |        |         |                                                | 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 18:01:01-18:03, 18:05-18:06, 18:08-18:15, 18:17N-18:28, 18:30-18:32, 18:34-18:50, 37:01:01-37:20, 37:23, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39, 39:49, 40:12, 42:11, 52:16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>12<sup>5</sup></b>     | 120 bp | 1070 bp | *48:22-48:23                                   | *13:23, 15:71, 15:116, 15:124, 15:175, 18:01:01-18:03, 18:05-18:15, 18:17N-18:24, 18:26-18:42, 18:44-18:50, 35:50, 35:84, 37:01:01-37:01:06, 37:02-37:23, 40:52, 40:59, 40:83, 42:02, 42:09, 46:06, 46:14, 49:03, 58:05, 73:01-73:02, <b>C*07:123</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>13<sup>5,6,9</sup></b> | 135 bp | 1070 bp | *48:05, 48:10, 48:12-48:13, 48:14 <sup>w</sup> | *07:05:01-07:06, 07:32, 07:34, 07:40, 07:53, 07:69, 07:78, 07:80, 07:97, 07:105, 07:112, 08:01:01-08:01:11, 08:02-08:05, 08:08N-08:12:01, 08:12:03-08:13, 08:15-08:27, 08:29-08:36, 08:38-08:48, 08:50-08:62, 13:03, 13:22:01-13:22:02, 14:13, 15:09, 15:30, 15:42, 15:48, 15:58, 15:73, 15:83, 15:86, 15:150, 15:188, 18:26, 27:07, 27:11, 27:20, 27:27, 27:33, 27:43, 35:02:01-35:02:04, 35:04:01-35:04:03, 35:06, 35:09:01-35:09:02, 35:12:01-35:12:02, 35:18, 35:22, 35:31, 35:44, 35:59-35:60, 35:81, 35:83, 35:87-35:88, 35:95, 35:129N, 37:12, 38:01:01, 38:01:03-38:21, 38:23, 39:01:01:01-39:01:01:02L, 39:01:03-39:06:02, 39:08-39:14, 39:16, 39:18-39:20, 39:22, 39:24, 39:26-39:28, 39:30-39:42, 39:45-39:48, 39:50-39:54, 39:56 <sup>w</sup> , 39:57-39:60, 40:02:01-40:02:09, 40:02:11, 40:04-40:06:03, 40:08, 40:11:01-40:11:02, 40:13-40:16, 40:19, 40:26-40:29, 40:35, 40:37, 40:39-40:40, 40:50, 40:53, 40:56-40:58, 40:64, 40:68, 40:70-40:71, 40:72:01 <sup>w</sup> -40:72:02 <sup>w</sup> , 40:75, |

|                            |                   |               |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|-------------------|---------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |                   |               |                         | 40:77 <sup>w</sup> , 40:78, 40:82-40:83,<br>40:86, 40:90, 40:93-40:97, 40:99,<br>40:103-40:105, 40:107, 40:109-<br>40:111, 40:115, 40:119, 40:121-<br>40:122, 40:127, 40:129, 40:133Q,<br>40:136, 40:142N-40:145, 41:01-<br>41:03:02, 41:05-41:09, 41:11-<br>41:12, 42:01:01-42:02, 42:04-<br>42:08, 42:10-42:14, 44:10, 44:14,<br>44:62, 44:77, 44:82, 45:12, 46:11,<br>46:18, 51:01:01-51:02:02,<br>51:02:04-51:16, 51:19-51:24:03,<br>51:26, 51:28-51:36, 51:38-<br>51:41N, 51:43-51:44N, 51:46,<br>51:48-51:74, 51:75 <sup>w</sup> , 51:76-<br>51:83, 51:86-51:89, 51:91, 51:95-<br>51:96, 52:01:01-52:11, 52:13-<br>52:21, 53:19, 54:01-54:05N,<br>54:07-54:08N, 54:10, 54:12-<br>54:13, 54:17-54:21, 54:23,<br>55:01:01-55:05, 55:07-55:13,<br>55:15-55:22, 55:24-55:26, 55:28-<br>55:40, 55:42-55:43, 56:01:01-<br>56:02, 56:04-56:08, 56:10, 56:12-<br>56:17, 56:19N-56:29, 57:02:01-<br>57:03:02, 57:07, 57:09, 57:12,<br>57:17, 57:28N, 58:08, 58:20,<br>58:27-58:28, 59:01-59:05,<br>67:01:01-67:02, 78:01-78:07,<br>82:01-82:03, <b>C*06:21, C*15:24</b> |
| <b>14<sup>5,10</sup></b>   | 100 bp,<br>250 bp | 1070 bp       | *48:09, 48:11,<br>48:14 | *07:09, 07:11, 07:17, 08:28,<br>08:35, 08:37, 15:07:01-15:07:02,<br>15:55, 15:68, 15:126, 18:14,<br>35:05:01-35:05:02, 35:51, 35:58,<br>35:66, 35:72, 35:89, 35:97,<br>35:114, 40:03, 40:105, 42:09,<br>46:12, 53:14, 58:18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>15<sup>5,6,11</sup></b> | 140 bp,<br>435 bp | <b>800 bp</b> | *48:12, 48:14,<br>48:18 | *07:36, 07:38, 07:68:01-07:68:02,<br>07:81, 07:100, 08:03, 08:52,<br>14:05, 14:13, 15:07:01-15:07:02,<br>15:45, 15:55, 15:68, 15:126,<br>18:14, 27:32, 35:05:01-35:05:02,<br>35:22, 35:51, 35:58, 35:66, 35:72,<br>35:89, 35:97, 38:01:01-38:01:04,<br>38:05-38:07, 38:09-38:14, 38:16,<br>38:19-38:22, 39:03, 39:14, 39:24,<br>39:29, 39:37, 40:35, 40:71,<br>40:109 <sup>?</sup> , 40:117 <sup>?</sup> , 42:10, 44:18,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                         |        |         |                      |                                                                                                                                                                                                       |
|-------------------------|--------|---------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |        |         |                      | 44:54, 44:106, 46:12, 49:01:01-49:01:02, 49:03-49:10, 51:64, 53:14, 58:18                                                                                                                             |
| <b>16<sup>5,6</sup></b> | 120 bp | 1070 bp | *48:05, 48:08, 48:15 | *07:02:01-07:18:02, 07:20-07:24, 07:26-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:115, 15:138, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, <b>C*02:23</b> |

<sup>1</sup>Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B\*48 SSP typings.

When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

<sup>2</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B\*48 SSP subtyping.

In addition, wells number 2, 3, 4, 11 and 15 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

In the presence of a specific amplification the intensity of the control band often decreases.

<sup>3</sup>The B\*48:09 and B\*48:11 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 14.

The B\*48 primer set cannot separate the B\*48:06 and B\*81:02 alleles. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B\*81 kits.

The B\*48 primer set cannot separate the B\*48:10, B\*08:17, B\*08:54 and B\*42:11 alleles. These alleles can be distinguished by the HLA-B low resolution and/or HLA-B\*08 and HLA-B\*42 kits.

The B\*48 primer set cannot separate the B\*48:13 and the 38:03, 39:02:01-39:02:02, 39:08 and 39:13:01-39:13:02 alleles. The B\*48:13 allele can be distinguished from the B\*38:03 and B\*39:xx alleles by the HLA-B low resolution and/or HLA-B\*38/HLA-B\*39 kits.

<sup>4</sup>Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B\*48 alleles will be amplified by all HLA-B\*48 primer mixes. In addition, the C\*02:23 and C\*07:38 alleles will be amplified by primer mix 5, the C\*15:24 allele will be amplified by primer mix 10, the C\*07:123 allele will be amplified by primer mix 12, the C\*06:21 and C\*15:24 alleles will be amplified by primer mix 13 and the C\*02:23 allele will be amplified by primer mix 16.

<sup>5</sup>Short specific PCR fragments are less intense and not as sharp as longer specific bands.

<sup>6</sup>Primer mixes 2, 8, 10, 13, 15 and 16 have a tendency of giving rise to nonspecific amplifications.

<sup>7</sup>Primer mix 6: Specific PCR fragment of 90 bp in the B\*48:20 allele. Specific PCR fragment of 170 bp in the B\*48:05 allele. Specific PCR fragment of 285 bp in the B\*48:21 and in the B\*27:36 alleles.

Lot No.: **44K**

Lot-specific information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

<sup>8</sup>Primer mix 8: Specific PCR fragment of 85 bp in the B\*48:16 allele. Specific PCR fragment of 225 bp in the B\*48:07 and 48:17 and in the B\*07:78, 07:115, 40:36, 40:48 and 40:77 alleles.

<sup>9</sup>Primer mix 13 might faintly amplify the B\*13:xx alleles.

<sup>10</sup>Primer mix 14: Specific PCR fragment of 100 bp in the B\*48:09 and 48:14 and in the B\*07:09, 07:11, 07:17, 08:28, 08:35, 08:37, 15:07:01-15:07:02, 15:55, 15:68, 15:126, 18:14, 35:05:01-35:05:02, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 35:114, 40:03, 40:105, 42:09, 46:12, 53:14 and 58:18 alleles. Specific PCR fragment of 250 bp in the B\*48:11 allele.

<sup>11</sup>Primer mix 15: Specific PCR fragment of 140 bp in the B\*48:12 and 48:14 and in the B\*07:68:01-07:68:02, 07:100, 14:05, 14:13, 15:07:01-15:07:02, 15:45, 15:55, 15:68, 15:126, 18:14, 27:32, 35:05:01-35:05:02, 35:22, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 39:03, 39:14, 39:24, 39:29, 39:37, 40:35, 40:71, 42:10, 44:54, 44:106, 46:12, 51:64, 53:14 and 58:18 alleles. Specific PCR fragment of 435 bp in the B\*48:18 and in the 07:36, 07:38, 07:81, 08:03, 08:52, 38:01:01-38:01:04, 38:05-38:07, 38:09-38:14, 38:16, 38:20-38:22, 40:109<sup>?</sup>, 40:117<sup>?</sup>, 44:18, 49:01:01-49:01:02 and 49:03-49:10 alleles. Specific PCR fragment of 140 and 435 bp in the B\*38:19 allele.

‘w’, might be weakly amplified.

‘?’ , nucleotide sequence information not available for the primer matching sequence.

## INTERPRETATION TABLE

### HLA-B\*48 SSP subtyping

Amplification patterns of the B\*48:01 to 48:23 alleles

|                            | Well <sup>8</sup> |            |            |            |            |            |            |            |
|----------------------------|-------------------|------------|------------|------------|------------|------------|------------|------------|
|                            | 1                 | 2          | 3          | 4          | 5          | 6          | 7          | 8          |
| Length of spec.            | 385               | 145        | 175        | 150        | 285        | 90         | 385        | 85         |
| PCR product(s)             |                   |            |            |            |            | 170        |            | 225        |
|                            |                   |            |            |            |            | 285        |            |            |
| Length of int.             | 800               | 800        | 800        | 800        | 1070       | 1070       | 1070       | 1070       |
| pos. control <sup>1</sup>  |                   |            |            |            |            |            |            |            |
| 5'-primer(s) <sup>2</sup>  | 44                | 499        | 363        | 355        | 363        | 144        | 44         | 260        |
|                            | 5' -ggC 3'        | 5' -TCT 3' | 5' -AgC 3' | 5' -TCA 3' | 5' -Agg 3' | 5' -TCC 3' | 5' -ggC 3' | 5' -ggT 3' |
|                            |                   |            |            |            | 363        | 225        |            | 419        |
|                            |                   |            |            |            | 5' -Agg 3' | 5' -TgC 3' |            | 5' -gTT 3' |
|                            |                   |            |            |            |            | 363        |            | 419        |
|                            |                   |            |            |            |            | 5' -AAT 3' |            | 5' -gTT 3' |
|                            |                   |            |            |            |            |            |            |            |
| 3'-primer(s) <sup>3</sup>  | 259               | 605        | 499        | 463        | 605        | 272        | 259        | 302        |
|                            | 5' -CTC 3'        | 5' -gCT 3' | 5' -ggA 3' | 5' -gCT 3' | 5' -gCT 3' | 5' -Tgg 3' | 5' -gTT 3' | 5' -ggC 3' |
|                            |                   |            |            |            |            | 605        | 259        | 605        |
|                            |                   |            |            |            |            | 5' -gCT 3' | 5' -gTT 3' | 5' -gCT 3' |
|                            |                   |            |            |            |            |            |            |            |
|                            |                   |            |            |            |            |            |            |            |
| Well No.                   | 1                 | 2          | 3          | 4          | 5          | 6          | 7          | 8          |
| HLA-B allele               |                   |            |            |            |            |            |            |            |
| *48:01:01-48:01:03         | 1                 | 2          | 3          |            |            |            |            |            |
| *48:02:01-48:02:02         | 1                 |            |            | 4          |            |            |            |            |
| *48:03:01-48:03:02         | 1                 | 2          |            |            | 5          |            |            |            |
| *48:04                     | 1                 |            | 3          |            |            |            |            |            |
| *48:05                     | 1                 |            |            |            |            | 6          |            |            |
| *48:06, 81:02 <sup>4</sup> |                   | 2          | 3          |            |            |            | 7          |            |
| *48:07                     | 1                 | 2          | 3          |            |            |            |            | 8          |
| *48:08                     | 1                 |            |            |            |            |            |            |            |
| Well No.                   | 1                 | 2          | 3          | 4          | 5          | 6          | 7          | 8          |

## INTERPRETATION TABLE

### HLA-B\*48 SSP subtyping

Amplification patterns of the B\*48:01 to 48:23 alleles

| Well <sup>8</sup>     |                       |                       |                       |                       |                       |                       |                       |                                             |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------------------------|
| 9                     | 10                    | 11                    | 12                    | 13                    | 14                    | 15                    | 16                    |                                             |
| 215                   | 240                   | 170                   | 120                   | 135                   | 100                   | 140                   | 120                   | Length of spec.<br>PCR product(s)           |
|                       |                       |                       |                       |                       | 250                   | 435                   |                       |                                             |
| 1070                  | 1070                  | 800                   | 1070                  | 1070                  | 1070                  | 800                   | 1070                  | Length of int.<br>pos. control <sup>1</sup> |
|                       |                       |                       |                       |                       |                       |                       |                       |                                             |
| 363                   | 412                   | 142                   | 97                    | 397                   | 363                   | 44                    | 527                   | 5'-primer(s) <sup>2</sup>                   |
| 5' -AgC <sup>3'</sup> | 5' -ATA <sup>3'</sup> | 5' -TCT <sup>3'</sup> | 5' -TCC <sup>3'</sup> | 5' -gCT <sup>3'</sup> | 5' -AgC <sup>3'</sup> | 5' -ggC <sup>3'</sup> | 5' -TgA <sup>3'</sup> |                                             |
|                       |                       | 142                   | 419                   | 412                   | 693                   | 363                   |                       |                                             |
|                       |                       | 5' -TCT <sup>3'</sup> | 5' -gTC <sup>3'</sup> | 5' -ATA <sup>3'</sup> | 5' -ggT <sup>3'</sup> | 5' -AgC <sup>3'</sup> |                       |                                             |
|                       |                       |                       |                       |                       |                       |                       |                       |                                             |
|                       |                       |                       |                       |                       |                       |                       |                       |                                             |
|                       |                       |                       |                       |                       |                       |                       |                       |                                             |
| 539                   | 610                   | 272                   | 165                   | 499                   | 419                   | 309                   | 605                   | 3'-primer(s) <sup>3</sup>                   |
| 5' -TCC <sup>3'</sup> | 5' -CTg <sup>3'</sup> | 5' -Tgg <sup>3'</sup> | 5' -Tgg <sup>3'</sup> | 5' -ggT <sup>3'</sup> | 5' -Cgg <sup>3'</sup> | 5' -ATC <sup>3'</sup> | 5' -gCT <sup>3'</sup> |                                             |
|                       |                       |                       | 512                   |                       | 572                   | 463                   |                       |                                             |
|                       |                       |                       | 5' -CCA <sup>3'</sup> |                       | 5' -gCA <sup>3'</sup> | 5' -gCT <sup>3'</sup> |                       |                                             |
|                       |                       |                       |                       |                       | 755                   |                       |                       |                                             |
|                       |                       |                       |                       |                       | 5' -CAA <sup>3'</sup> |                       |                       |                                             |
| 9                     | 10                    | 11                    | 12                    | 13                    | 14                    | 15                    | 16                    | Well No.                                    |
|                       |                       |                       |                       |                       |                       |                       |                       | HLA-B allele                                |
|                       |                       | 11                    |                       |                       |                       |                       |                       | *48:01:01-48:01:03                          |
|                       |                       | 11                    |                       |                       |                       |                       |                       | *48:02:01-48:02:02                          |
|                       |                       | 11                    |                       |                       |                       |                       |                       | *48:03:01-48:03:02                          |
|                       | 10                    | 11                    |                       |                       |                       |                       |                       | *48:04                                      |
| 9                     |                       | 11                    |                       | 13                    |                       |                       | 16                    | *48:05                                      |
|                       |                       |                       |                       |                       |                       |                       |                       | *48:06, 81:02 <sup>4</sup>                  |
|                       |                       | 11                    |                       |                       |                       |                       |                       | *48:07                                      |
| 9                     |                       | 11                    |                       |                       |                       |                       | 16                    | *48:08                                      |
| 9                     | 10                    | 11                    | 12                    | 13                    | 14                    | 15                    | 16                    | Well No.                                    |

| Length of spec.                                                                                                                                                                                                                                                               | 385 | 145 | 175 | 150 | 285 | 90  | 385 | 85  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| PCR product(s)                                                                                                                                                                                                                                                                |     |     |     |     |     | 170 |     | 225 |
|                                                                                                                                                                                                                                                                               |     |     |     |     |     | 285 |     |     |
| Well No.                                                                                                                                                                                                                                                                      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| *48:09, 48:11 <sup>5</sup>                                                                                                                                                                                                                                                    | 1   | 2   | 3   |     |     |     |     |     |
| *48:10, 08:17, 08:54, 42:11 <sup>6</sup>                                                                                                                                                                                                                                      | 1   |     |     |     |     |     |     |     |
| *48:12                                                                                                                                                                                                                                                                        | 1   |     |     |     |     |     |     |     |
| *48:13, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02 <sup>7</sup>                                                                                                                                                                                                       | 1   |     |     |     |     |     |     |     |
| *48:14                                                                                                                                                                                                                                                                        | 1   |     |     |     |     |     |     |     |
| *48:15                                                                                                                                                                                                                                                                        | 1   | 2   | 3   |     |     |     |     |     |
| *48:16                                                                                                                                                                                                                                                                        |     | 2   | 3   |     |     |     |     | 8   |
| *48:17                                                                                                                                                                                                                                                                        | 1   | 2   |     |     | 5   |     |     | 8   |
| *48:18                                                                                                                                                                                                                                                                        | 1   | 2   | 3   |     |     |     |     |     |
| *48:19                                                                                                                                                                                                                                                                        | 1   | 2   | 3   |     |     |     |     |     |
| *48:20                                                                                                                                                                                                                                                                        | 1   | 2   | 3   |     |     | 6   |     |     |
| *48:21                                                                                                                                                                                                                                                                        | 1   | 2   |     |     |     | 6   |     |     |
| *48:22                                                                                                                                                                                                                                                                        | 1   | 2   | 3   |     |     |     |     |     |
| *48:23                                                                                                                                                                                                                                                                        | 1   | 2   |     |     | 5   |     |     |     |
| *07:02:01-07:03, 07:08, 07:10, 07:15-07:16, 07:20-07:24, 07:28-07:31, 07:35, 07:37, 07:39, 07:41-07:42, 07:44, 07:46-07:47, 07:49N, 07:55-07:59, 07:61-07:64, 07:67N, 07:70-07:76, 07:79, 07:82-07:83, 07:85-07:96, 07:98-07:99, 07:101-07:104, 07:106-07:111N, 07:113-07:114 |     |     |     |     |     |     | 7   |     |
| *07:04, 07:26, 07:43, 07:45, 07:52, 07:66, 07:84                                                                                                                                                                                                                              |     |     |     |     |     |     | 7   |     |
| *07:05:01-07:06, 07:32, 07:69, 07:97, 07:105, 07:112                                                                                                                                                                                                                          |     |     |     |     |     |     | 7   |     |
| *07:07, 07:12, 07:14, 07:18:01-07:18:02, 07:77                                                                                                                                                                                                                                |     |     |     |     | 5   |     | 7   |     |
| *07:09, 07:11, 07:17                                                                                                                                                                                                                                                          |     |     |     |     |     |     | 7   |     |
| *07:13, 07:54, 07:65                                                                                                                                                                                                                                                          |     |     |     |     |     |     |     |     |
| *07:19, 07:25, 07:48, 08:01:12, 08:07, 08:12:02, 08:14, 14:01-14:03, 14:06:01-14:09, 14:11-14:12, 14:14-14:18, 39:07, 39:15, 39:17, 39:25N, 39:43, 39:55                                                                                                                      |     |     |     |     |     |     | 7   |     |
| *07:27, 07:50                                                                                                                                                                                                                                                                 |     |     |     |     |     |     | 7   |     |
| *07:33, 07:51, 07:60                                                                                                                                                                                                                                                          |     |     |     |     |     |     | 7   |     |
| *07:34, 07:80                                                                                                                                                                                                                                                                 |     |     |     |     |     |     | 7   |     |
| *07:36, 07:38, 07:68:01-07:68:02, 07:81                                                                                                                                                                                                                                       |     |     |     |     |     |     | 7   |     |
| *07:40, 08:20, 08:40                                                                                                                                                                                                                                                          |     |     |     |     |     |     | 7   |     |
| *07:53                                                                                                                                                                                                                                                                        |     |     |     |     |     |     | 7   |     |
| *07:78                                                                                                                                                                                                                                                                        |     |     |     |     |     |     | 7   | 8   |
| *07:100                                                                                                                                                                                                                                                                       |     |     |     |     |     |     | 7   |     |
| *07:115                                                                                                                                                                                                                                                                       |     |     |     |     |     |     | 7   | 8   |
| Well No.                                                                                                                                                                                                                                                                      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |

| 215 | 240 | 170 | 120 | 135 | 100 | 140 | 120 | Length of spec.<br>PCR product(s)                                                                                                                                                                                                                                             |
|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |     |     |     |     | 250 | 435 |     |                                                                                                                                                                                                                                                                               |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                      |
|     |     | 11  |     |     | 14  |     |     | *48:09, 48:11 <sup>5</sup>                                                                                                                                                                                                                                                    |
|     |     | 11  |     | 13  |     |     |     | *48:10, 08:17, 08:54, 42:11 <sup>6</sup>                                                                                                                                                                                                                                      |
|     |     | 11  |     | 13  |     | 15  |     | *48:12                                                                                                                                                                                                                                                                        |
|     | 10  | 11  |     | 13  |     |     |     | *48:13, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02 <sup>7</sup>                                                                                                                                                                                                       |
|     |     | 11  |     | w   | 14  | 15  |     | *48:14                                                                                                                                                                                                                                                                        |
|     |     | 11  |     |     |     |     | 16  | *48:15                                                                                                                                                                                                                                                                        |
|     |     | 11  |     |     |     |     |     | *48:16                                                                                                                                                                                                                                                                        |
|     |     | 11  |     |     |     |     |     | *48:17                                                                                                                                                                                                                                                                        |
|     |     | 11  |     |     |     | 15  |     | *48:18                                                                                                                                                                                                                                                                        |
| 9   |     | 11  |     |     |     |     |     | *48:19                                                                                                                                                                                                                                                                        |
|     |     | 11  |     |     |     |     |     | *48:20                                                                                                                                                                                                                                                                        |
|     |     | 11  |     |     |     |     |     | *48:21                                                                                                                                                                                                                                                                        |
|     |     | 11  | 12  |     |     |     |     | *48:22                                                                                                                                                                                                                                                                        |
|     |     | 11  | 12  |     |     |     |     | *48:23                                                                                                                                                                                                                                                                        |
| 9   |     |     |     |     |     |     | 16  | *07:02:01-07:03, 07:08, 07:10, 07:15-07:16, 07:20-07:24, 07:28-07:31, 07:35, 07:37, 07:39, 07:41-07:42, 07:44, 07:46-07:47, 07:49N, 07:55-07:59, 07:61-07:64, 07:67N, 07:70-07:76, 07:79, 07:82-07:83, 07:85-07:96, 07:98-07:99, 07:101-07:104, 07:106-07:111N, 07:113-07:114 |
|     |     |     |     |     |     |     | 16  | *07:04, 07:26, 07:43, 07:45, 07:52, 07:66, 07:84                                                                                                                                                                                                                              |
| 9   |     |     |     | 13  |     |     | 16  | *07:05:01-07:06, 07:32, 07:69, 07:97, 07:105, 07:112                                                                                                                                                                                                                          |
|     |     |     |     |     |     |     | 16  | *07:07, 07:12, 07:14, 07:18:01-07:18:02, 07:77                                                                                                                                                                                                                                |
| 9   |     |     |     |     | 14  |     | 16  | *07:09, 07:11, 07:17                                                                                                                                                                                                                                                          |
| 9   |     |     |     |     |     |     | 16  | *07:13, 07:54, 07:65                                                                                                                                                                                                                                                          |
|     |     |     |     |     |     |     |     | *07:19, 07:25, 07:48, 08:01:12, 08:07, 08:12:02, 08:14, 14:01-14:03, 14:06:01-14:09, 14:11-14:12, 14:14-14:18, 39:07, 39:15, 39:17, 39:25N, 39:43, 39:55                                                                                                                      |
| 9   |     | 11  |     |     |     |     | 16  | *07:27, 07:50                                                                                                                                                                                                                                                                 |
| 9   |     |     |     |     |     |     |     | *07:33, 07:51, 07:60                                                                                                                                                                                                                                                          |
|     |     |     |     | 13  |     |     | 16  | *07:34, 07:80                                                                                                                                                                                                                                                                 |
| 9   |     |     |     |     |     | 15  | 16  | *07:36, 07:38, 07:68:01-07:68:02, 07:81                                                                                                                                                                                                                                       |
| 9   |     |     |     | 13  |     |     |     | *07:40, 08:20, 08:40                                                                                                                                                                                                                                                          |
| 9   | 10  |     |     | 13  |     |     |     | *07:53                                                                                                                                                                                                                                                                        |
|     |     |     |     | 13  |     |     | 16  | *07:78                                                                                                                                                                                                                                                                        |
| 9   |     |     |     |     |     | 15  |     | *07:100                                                                                                                                                                                                                                                                       |
| 9   |     |     |     |     |     |     | 16  | *07:115                                                                                                                                                                                                                                                                       |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                      |

Lot No.: **44K**

Lot-specific information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

| Length of spec.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 385 | 145 | 175 | 150 | 285 | 90  | 385 | 85  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| PCR product(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |     |     |     |     | 170 |     | 225 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |     |     |     |     | 285 |     |     |
| Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| *08:01:01-08:01:11, 08:02, 08:05, 08:08N-08:09, 08:11-08:12:01, 08:12:03-08:13, 08:15-08:16, 08:18-08:19N, 08:21-08:27, 08:29-08:34, 08:36, 08:39, 08:41-08:48, 08:50-08:51, 08:53, 08:55-08:62, 42:01:01-42:01:02, 42:04-42:07, 42:12-42:13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |     |     |     |     |     | 7   |     |
| *08:03, 08:52, 42:10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |     |     |     |     |     | 7   |     |
| *08:04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |     |     |     |     |     | 7   |     |
| *08:10, 35:87, 51:96, 55:20, C*06:21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |     |     |     |     |     |     |     |
| *08:28, 08:37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |     |     |     |     | 7   |     |
| *08:35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |     |     |     |     |     | 7   |     |
| *08:38, 41:01-41:03:02, 41:05, 41:07, 41:11-41:12, 45:12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1   |     |     |     |     |     |     |     |
| *08:49, 14:10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |     | 4   |     |     | 7   |     |
| *13:01:01-13:01:02, 13:01:04-13:01:05, 13:06-13:07N, 13:12-13:13, 13:17, 13:20, 13:25, 13:28-13:29, 13:36, 13:39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |     | 4   |     |     |     |     |
| *13:01:03, 13:26, 15:02:01-15:02:04, 15:13, 15:20-15:21, 15:25:01-15:25:02, 15:36, 15:44, 15:77, 15:80, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 15:194, 27:19, 27:30, 35:01:01-35:01:21, 35:03:01-35:03:04, 35:07-35:08:04, 35:10-35:11:02, 35:13-35:17, 35:19-35:21, 35:23-35:30, 35:33-35:36, 35:38-35:42:02, 35:45-35:49, 35:52, 35:54-35:57, 35:61-35:63, 35:65Q, 35:69-35:71, 35:74, 35:76-35:78, 35:80, 35:82, 35:85, 35:90-35:94, 35:96, 35:98, 35:100-35:101:02, 35:103-35:113, 35:115-35:116, 35:120-35:126, 35:128, 35:130N-35:134N, 35:136-35:145N, 44:02:01:01-44:09, 44:11-44:13, 44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40, 44:42-44:46, 44:48-44:52N, 44:55-44:61N, 44:63-44:64:02, 44:66-44:76, 44:78-44:81, 44:83-44:98, 44:101-44:105, 44:107-44:110, 51:42, 53:01:01-53:13, 53:15-53:18, 53:20-53:23, 55:14, 56:09, 56:11, 57:01:01-57:01:04, 57:01:06-57:01:08, 57:04-57:06, 57:08, 57:10, 57:14-57:16, 57:18-57:20, 57:22-57:27, 57:29-57:30, 57:32, 58:01:01-58:01:02, 58:01:04-58:01:07, 58:04, 58:09-58:15, 58:17N, 58:19, 58:21-58:24, 58:29-58:30, 83:01 |     |     |     | 4   |     |     |     |     |
| Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |

| 215 | 240 | 170 | 120 | 135 | 100 | 140 | 120 | Length of spec.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----|-----|-----|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |     |     |     |     | 250 | 435 |     | PCR product(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|     |     |     |     | 13  |     |     |     | *08:01:01-08:01:11, 08:02, 08:05, 08:08N-08:09, 08:11-08:12:01, 08:12:03-08:13, 08:15-08:16, 08:18-08:19N, 08:21-08:27, 08:29-08:34, 08:36, 08:39, 08:41-08:48, 08:50-08:51, 08:53, 08:55-08:62, 42:01:01-42:01:02, 42:04-42:07, 42:12-42:13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|     |     |     |     | 13  |     | 15  |     | *08:03, 08:52, 42:10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     |     | 11  |     | 13  |     |     |     | *08:04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|     |     |     |     | 13  |     |     |     | *08:10, 35:87, 51:96, 55:20, C*06:21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     |     |     |     |     | 14  |     |     | *08:28, 08:37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|     |     |     |     | 13  | 14  |     |     | *08:35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|     |     |     |     | 13  |     |     |     | *08:38, 41:01-41:03:02, 41:05, 41:07, 41:11-41:12, 45:12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|     |     |     |     |     |     |     |     | *08:49, 14:10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|     | 10  |     |     |     |     |     |     | *13:01:01-13:01:02, 13:01:04-13:01:05, 13:06-13:07N, 13:12-13:13, 13:17, 13:20, 13:25, 13:28-13:29, 13:36, 13:39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|     |     |     |     |     |     |     |     | *13:01:03, 13:26, 15:02:01-15:02:04, 15:13, 15:20-15:21, 15:25:01-15:25:02, 15:36, 15:44, 15:77, 15:80, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 15:194, 27:19, 27:30, 35:01:01:01-35:01:21, 35:03:01-35:03:04, 35:07-35:08:04, 35:10-35:11:02, 35:13-35:17, 35:19-35:21, 35:23-35:30, 35:33-35:36, 35:38-35:42:02, 35:45-35:49, 35:52, 35:54-35:57, 35:61-35:63, 35:65Q, 35:69-35:71, 35:74, 35:76-35:78, 35:80, 35:82, 35:85, 35:90-35:94, 35:96, 35:98, 35:100-35:101:02, 35:103-35:113, 35:115-35:116, 35:120-35:126, 35:128, 35:130N-35:134N, 35:136-35:145N, 44:02:01:01-44:09, 44:11-44:13, 44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40, 44:42-44:46, 44:48-44:52N, 44:55-44:61N, 44:63-44:64:02, 44:66-44:76, 44:78-44:81, 44:83-44:98, 44:101-44:105, 44:107-44:110, 51:42, 53:01:01-53:13, 53:15-53:18, 53:20-53:23, 55:14, 56:09, 56:11, 57:01:01-57:01:04, 57:01:06-57:01:08, 57:04-57:06, 57:08, 57:10, 57:14-57:16, 57:18-57:20, 57:22-57:27, 57:29-57:30, 57:32, 58:01:01-58:01:02, 58:01:04-58:01:07, 58:04, 58:09-58:15, 58:17N, 58:19, 58:21-58:24, 58:29-58:30, 83:01 |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Length of spec.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 385 | 145 | 175 | 150 | 285 | 90  | 385 | 85  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| PCR product(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |     |     |     | 170 |     | 225 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |     |     |     |     | 285 |     |     |
| Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| *13:02:01-13:02:09, 13:08Q-13:09, 13:11, 13:14-13:16, 13:18-13:19, 13:21, 13:27, 13:30-13:33, 13:37-13:38, 51:27N, 51:84, 51:93, 54:11, 54:22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |     |     |     |     |     |     |
| *13:03, 15:09, 15:30, 15:42, 15:48, 15:58, 15:73, 15:83, 15:86, 15:150, 15:188, 27:07, 27:11, 27:20, 27:27, 27:33, 27:43, 35:09:01-35:09:02, 35:18, 35:31, 35:44, 35:60, 35:88, 40:02:01-40:02:09, 40:02:11, 40:04-40:06:03, 40:08, 40:13, 40:39-40:40, 40:68, 40:70, 40:94, 40:97, 40:122, 40:142N-40:144N, 46:11, 46:18, 51:01:01-51:02:02, 51:02:04-51:03, 51:05-51:16, 51:19-51:24:03, 51:26, 51:28-51:36, 51:38-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:63, 51:65-51:74, 51:76-51:83, 51:86-51:89, 51:91, 51:95, 52:01:01-52:11, 52:13-52:15, 52:17-52:21, 54:01-54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:17-54:21, 54:23, 55:01:01-55:05, 55:07-55:13, 55:15-55:19, 55:21-55:22, 55:24-55:26, 55:28-55:40, 55:42-55:43, 56:01:01-56:02, 56:04-56:08, 56:10, 56:13-56:17, 56:19N-56:29, 58:08, 58:20, 58:27, 59:01-59:05, 67:02, 78:01-78:07, 82:01-82:03, C*15:24 |     |     |     |     |     |     |     |     |
| *13:22:01-13:22:02, 35:04:01-35:04:03, 35:06, 35:12:01-35:12:02, 35:59, 44:10, 44:14, 44:62, 44:77, 44:82, 51:04, 51:46, 51:56, 56:12, 57:02:01-57:03:02, 57:07, 57:09, 57:12, 57:17, 57:28N, 58:28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |     |     | 4   |     |     |     |     |
| *13:23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |     | 4   |     |     |     |     |
| *14:05, 38:01:02, 38:22, 39:29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |     |     |     |     | 7   |     |
| *14:13, 38:01:01, 38:01:03-38:01:04, 38:05-38:07, 38:09-38:14, 38:16, 38:19, 38:21, 39:03, 39:14, 39:24, 39:37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |     |     |     |     | 7   |     |
| *15:03:01-15:03:03, 15:47, 15:54, 15:61, 15:64, 15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 18:25, 18:43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |     |     |     |     |     |     |     |
| *15:07:01-15:07:02, 15:126, 35:66, 46:12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |     |     |     |     |     |     |     |
| *15:45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |     |     |     |     |     |     |
| *15:55, 35:05:01-35:05:02, 35:51, 35:58, 35:72, 35:89, 35:97, 53:14, 58:18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |     |     |     |     |     |     |
| *15:62, 37:01:07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |     |     | 4   |     |     |     |     |
| *15:68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1   |     |     |     |     |     |     |     |
| Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |

| 215 | 240 | 170 | 120 | 135 | 100 | 140 | 120 | Length of spec.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----|-----|-----|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |     |     |     |     | 250 | 435 |     | PCR product(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|     | 10  |     |     |     |     |     |     | *13:02:01-13:02:09, 13:08Q-13:09, 13:11, 13:14-13:16, 13:18-13:19, 13:21, 13:27, 13:30-13:33, 13:37-13:38, 51:27N, 51:84, 51:93, 54:11, 54:22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|     | 10  |     |     | 13  |     |     |     | *13:03, 15:09, 15:30, 15:42, 15:48, 15:58, 15:73, 15:83, 15:86, 15:150, 15:188, 27:07, 27:11, 27:20, 27:27, 27:33, 27:43, 35:09:01-35:09:02, 35:18, 35:31, 35:44, 35:60, 35:88, 40:02:01-40:02:09, 40:02:11, 40:04-40:06:03, 40:08, 40:13, 40:39-40:40, 40:68, 40:70, 40:94, 40:97, 40:122, 40:142N-40:144N, 46:11, 46:18, 51:01:01-51:02:02, 51:02:04-51:03, 51:05-51:16, 51:19-51:24:03, 51:26, 51:28-51:36, 51:38-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:63, 51:65-51:74, 51:76-51:83, 51:86-51:89, 51:91, 51:95, 52:01:01-52:11, 52:13-52:15, 52:17-52:21, 54:01-54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:17-54:21, 54:23, 55:01:01-55:05, 55:07-55:13, 55:15-55:19, 55:21-55:22, 55:24-55:26, 55:28-55:40, 55:42-55:43, 56:01:01-56:02, 56:04-56:08, 56:10, 56:13-56:17, 56:19N-56:29, 58:08, 58:20, 58:27, 59:01-59:05, 67:02, 78:01-78:07, 82:01-82:03, C*15:24 |
|     | 10  |     |     | 13  |     |     |     | *13:22:01-13:22:02, 35:04:01-35:04:03, 35:06, 35:12:01-35:12:02, 35:59, 44:10, 44:14, 44:62, 44:77, 44:82, 51:04, 51:46, 51:56, 56:12, 57:02:01-57:03:02, 57:07, 57:09, 57:12, 57:17, 57:28N, 58:28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|     | 10  |     | 12  |     |     |     |     | *13:23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|     |     |     |     |     |     | 15  |     | *14:05, 38:01:02, 38:22, 39:29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     | 10  |     |     | 13  |     | 15  |     | *14:13, 38:01:01, 38:01:03-38:01:04, 38:05-38:07, 38:09-38:14, 38:16, 38:19, 38:21, 39:03, 39:14, 39:24, 39:37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     |     | 11  |     |     |     |     |     | *15:03:01-15:03:03, 15:47, 15:54, 15:61, 15:64, 15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 18:25, 18:43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9   |     |     |     |     | 14  | 15  |     | *15:07:01-15:07:02, 15:126, 35:66, 46:12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9   |     |     |     |     |     | 15  |     | *15:45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|     |     |     |     |     | 14  | 15  |     | *15:55, 35:05:01-35:05:02, 35:51, 35:58, 35:72, 35:89, 35:97, 53:14, 58:18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|     |     | 11  |     |     |     |     |     | *15:62, 37:01:07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 9   |     | 11  |     |     | 14  | 15  |     | *15:68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Lot No.: **44K**

Lot-specific information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

| Length of spec.                                                                                                                                                                                                                                                         | 385 | 145 | 175 | 150 | 285 | 90  | 385 | 85  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| PCR product(s)                                                                                                                                                                                                                                                          |     |     |     |     |     | 170 |     | 225 |
|                                                                                                                                                                                                                                                                         |     |     |     |     |     | 285 |     |     |
| Well No.                                                                                                                                                                                                                                                                | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| *15:71, 15:116, 15:124, 15:175, 18:07:01-18:07:02, 18:29, 18:33, 46:14, C*07:123                                                                                                                                                                                        |     |     |     |     |     |     |     |     |
| *15:138, C*02:23                                                                                                                                                                                                                                                        |     |     |     |     | 5   |     |     |     |
| *18:01:01-18:03, 18:05-18:06, 18:08-18:13, 18:15, 18:17N-18:21, 18:23N-18:24, 18:27-18:28, 18:30-18:32, 18:34, 18:36-18:42, 18:44-18:50, 37:02, 37:09                                                                                                                   |     |     |     |     |     |     |     |     |
| *18:14                                                                                                                                                                                                                                                                  |     |     |     |     |     |     |     |     |
| *18:22, 37:01:01-37:01:06, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:20, 37:23                                                                                                                                                                                         |     |     |     | 4   |     |     |     |     |
| *18:26, 37:12                                                                                                                                                                                                                                                           |     |     |     |     |     |     |     |     |
| *18:35                                                                                                                                                                                                                                                                  |     |     |     |     | 5   |     |     |     |
| *27:24                                                                                                                                                                                                                                                                  |     |     | 3   |     |     |     |     |     |
| *27:32, 44:54, 44:106                                                                                                                                                                                                                                                   |     |     |     |     |     |     |     |     |
| *27:36                                                                                                                                                                                                                                                                  |     | 2   |     |     |     | 6   |     |     |
| *35:02:01-35:02:04, 35:81, 35:83, 35:95, 35:129N, 53:19                                                                                                                                                                                                                 |     |     |     | 4   |     |     |     |     |
| *35:22, 51:64                                                                                                                                                                                                                                                           |     |     |     |     |     |     |     |     |
| *35:50, 35:84, 37:21-37:22, 58:05                                                                                                                                                                                                                                       |     |     |     | 4   |     |     |     |     |
| *35:114, 40:03                                                                                                                                                                                                                                                          |     |     |     |     |     |     |     |     |
| *37:07                                                                                                                                                                                                                                                                  |     |     |     |     |     |     |     |     |
| *38:02:01-38:02:02, 38:08, 38:15, 38:17-38:18, 38:23, 39:01:01-39:01:01:02L, 39:01:03-39:01:11, 39:04-39:06:02, 39:09-39:12, 39:16, 39:18-39:20, 39:26-39:28, 39:30-39:36, 39:38Q, 39:40N-39:41, 39:45-39:48, 39:50-39:54, 39:57-39:60, 42:08, 42:14, 67:01:01-67:01:02 |     |     |     |     |     |     | 7   |     |
| *38:04, 39:22, 41:06, 41:09                                                                                                                                                                                                                                             | 1   |     |     |     |     |     |     |     |
| *38:20                                                                                                                                                                                                                                                                  |     |     |     | 4   |     |     | 7   |     |
| *39:23                                                                                                                                                                                                                                                                  | 1   |     |     |     |     |     |     |     |
| *39:39                                                                                                                                                                                                                                                                  |     |     |     |     |     |     | 7   |     |
| *39:42                                                                                                                                                                                                                                                                  |     |     |     | 4   |     |     | 7   |     |
| *39:44                                                                                                                                                                                                                                                                  |     |     |     |     |     |     | 7   |     |
| *39:49                                                                                                                                                                                                                                                                  | 1   |     |     |     |     |     |     |     |
| *39:56                                                                                                                                                                                                                                                                  |     |     |     |     |     |     | 7   |     |
| *40:01:01-40:01:12, 40:07, 40:60, 40:66, 40:73, 40:79, 40:124:01, 40:138-40:140, 40:146-40:147                                                                                                                                                                          | 1   | 2   |     |     | 5   |     |     |     |
| *40:09, 40:18, 40:24, 40:44, 40:120, 40:131                                                                                                                                                                                                                             | ?   |     |     |     |     |     |     |     |
| Well No.                                                                                                                                                                                                                                                                | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |

Lot No.: **44K**

Lot-specific information

www.olerup-ssp.com

| 215 | 240 | 170 | 120 | 135 | 100 | 140 | 120 | Length of spec.<br>PCR product(s)                                                                                                                                                                                                                                                            |
|-----|-----|-----|-----|-----|-----|-----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |     |     |     |     | 250 | 435 |     |                                                                                                                                                                                                                                                                                              |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                                     |
|     |     |     | 12  |     |     |     |     | *15:71, 15:116, 15:124, 15:175, 18:07:01-18:07:02,<br>18:29, 18:33, 46:14, C*07:123                                                                                                                                                                                                          |
|     |     |     |     |     |     |     | 16  | *15:138, C*02:23                                                                                                                                                                                                                                                                             |
|     |     | 11  | 12  |     |     |     |     | *18:01:01-18:03, 18:05-18:06, 18:08-18:13, 18:15,<br>18:17N-18:21, 18:23N-18:24, 18:27-18:28, 18:30-<br>18:32, 18:34, 18:36-18:42, 18:44-18:50, 37:02, 37:09                                                                                                                                 |
|     |     | 11  | 12  |     | 14  | 15  |     | *18:14                                                                                                                                                                                                                                                                                       |
|     |     | 11  | 12  |     |     |     |     | *18:22, 37:01:01-37:01:06, 37:03N-37:06, 37:08, 37:10-<br>37:11, 37:13-37:20, 37:23                                                                                                                                                                                                          |
|     | 10  | 11  | 12  | 13  |     |     |     | *18:26, 37:12                                                                                                                                                                                                                                                                                |
|     |     | 11  | 12  |     |     |     |     | *18:35                                                                                                                                                                                                                                                                                       |
|     | 10  |     |     |     |     |     |     | *27:24                                                                                                                                                                                                                                                                                       |
|     |     |     |     |     |     | 15  |     | *27:32, 44:54, 44:106                                                                                                                                                                                                                                                                        |
|     |     |     |     |     |     |     |     | *27:36                                                                                                                                                                                                                                                                                       |
|     | w   |     |     | 13  |     |     |     | *35:02:01-35:02:04, 35:81, 35:83, 35:95, 35:129N,<br>53:19                                                                                                                                                                                                                                   |
|     | 10  |     |     | 13  |     | 15  |     | *35:22, 51:64                                                                                                                                                                                                                                                                                |
|     |     |     | 12  |     |     |     |     | *35:50, 35:84, 37:21-37:22, 58:05                                                                                                                                                                                                                                                            |
|     |     |     |     |     | 14  |     |     | *35:114, 40:03                                                                                                                                                                                                                                                                               |
| 9   |     | 11  | 12  |     |     |     | 16  | *37:07                                                                                                                                                                                                                                                                                       |
|     | 10  |     |     | 13  |     |     |     | *38:02:01-38:02:02, 38:08, 38:15, 38:17-38:18, 38:23,<br>39:01:01:01-39:01:01:02L, 39:01:03-39:01:11, 39:04-<br>39:06:02, 39:09-39:12, 39:16, 39:18-39:20, 39:26-<br>39:28, 39:30-39:36, 39:38Q, 39:40N-39:41, 39:45-<br>39:48, 39:50-39:54, 39:57-39:60, 42:08, 42:14,<br>67:01:01-67:01:02 |
|     | 10  |     |     | 13  |     |     |     | *38:04, 39:22, 41:06, 41:09                                                                                                                                                                                                                                                                  |
|     | 10  |     |     | 13  |     | 15  |     | *38:20                                                                                                                                                                                                                                                                                       |
|     | 10  | 11  |     |     |     |     |     | *39:23                                                                                                                                                                                                                                                                                       |
|     | 10  | 11  |     | 13  |     |     |     | *39:39                                                                                                                                                                                                                                                                                       |
|     | 10  |     |     | 13  |     |     |     | *39:42                                                                                                                                                                                                                                                                                       |
|     | 10  |     |     |     |     |     |     | *39:44                                                                                                                                                                                                                                                                                       |
|     |     | 11  |     |     |     |     |     | *39:49                                                                                                                                                                                                                                                                                       |
|     | 10  |     |     | w   |     |     |     | *39:56                                                                                                                                                                                                                                                                                       |
|     |     |     |     |     |     |     |     | *40:01:01-40:01:12, 40:07, 40:60, 40:66, 40:73, 40:79,<br>40:124:01, 40:138-40:140, 40:146-40:147                                                                                                                                                                                            |
|     |     |     |     |     |     |     |     | *40:09, 40:18, 40:24, 40:44, 40:120, 40:131                                                                                                                                                                                                                                                  |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                                     |

| Length of spec.                                                                                                                                                                                                                                                                    | 385 | 145 | 175 | 150 | 285 | 90  | 385 | 85  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| PCR product(s)                                                                                                                                                                                                                                                                     |     |     |     |     |     | 170 |     | 225 |
|                                                                                                                                                                                                                                                                                    |     |     |     |     |     | 285 |     |     |
| Well No.                                                                                                                                                                                                                                                                           | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| *40:10:01-40:10:02, 40:21-40:22N, 40:33, 40:38, 40:42-40:43, 40:46-40:47, 40:49, 40:54-40:55, 40:61, 40:63, 40:67, 40:74, 40:76, 40:81, 40:84, 40:87-40:88, 40:100-40:102, 40:112-40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:132, 40:134-40:135, 40:137, 40:141 | ?   | 2   |     |     | 5   |     |     |     |
| *40:11:01-40:11:02, 40:19, 40:26-40:27, 40:29, 40:37, 40:50, 40:53, 40:56-40:58, 40:64, 40:75, 40:78, 40:82, 40:86, 40:90, 40:93, 40:95-40:96, 40:99, 40:103-40:104, 40:107, 40:110-40:111, 40:115, 40:119, 40:127, 40:129, 40:133Q, 40:145                                        | ?   |     |     |     |     |     |     |     |
| *40:12                                                                                                                                                                                                                                                                             |     | 2   |     |     | 5   |     |     |     |
| *40:14:01-40:14:03, 40:121, 40:136                                                                                                                                                                                                                                                 | ?   |     |     |     | 5   |     |     |     |
| *40:15                                                                                                                                                                                                                                                                             | ?   |     |     |     |     |     |     |     |
| *40:16                                                                                                                                                                                                                                                                             | 1   |     |     |     |     |     |     |     |
| *40:23                                                                                                                                                                                                                                                                             | 1   | 2   |     |     | 5   |     |     |     |
| *40:25, 40:69, 44:31                                                                                                                                                                                                                                                               |     | 2   |     |     | 5   |     |     |     |
| *40:28                                                                                                                                                                                                                                                                             | ?   |     |     | 4   |     |     |     |     |
| *40:30, 40:34                                                                                                                                                                                                                                                                      | ?   | 2   |     |     |     |     |     |     |
| *40:31, 40:45, 40:80                                                                                                                                                                                                                                                               | ?   | 2   | 3   |     |     |     |     |     |
| *40:32, 40:98                                                                                                                                                                                                                                                                      | ?   |     |     |     |     |     |     |     |
| *40:35, 40:71                                                                                                                                                                                                                                                                      | ?   |     |     |     |     |     |     |     |
| *40:36, 40:48                                                                                                                                                                                                                                                                      | ?   | 2   |     |     | 5   |     |     | 8   |
| *40:51                                                                                                                                                                                                                                                                             | 1   |     |     |     |     |     |     |     |
| *40:52                                                                                                                                                                                                                                                                             | ?   | 2   |     |     | 5   |     |     |     |
| *40:59                                                                                                                                                                                                                                                                             | 1   | 2   |     |     | 5   |     |     |     |
| *40:62, 40:65, 40:108                                                                                                                                                                                                                                                              | ?   |     |     |     | 5   |     |     |     |
| *40:72:01-40:72:02                                                                                                                                                                                                                                                                 | 1   |     |     |     | 5   |     |     |     |
| *40:77                                                                                                                                                                                                                                                                             | 1   |     |     |     | 5   |     |     | 8   |
| *40:83                                                                                                                                                                                                                                                                             | ?   |     |     |     |     |     |     |     |
| *40:85, 40:91-40:92, 40:130                                                                                                                                                                                                                                                        | ?   |     |     |     |     |     |     |     |
| *40:105                                                                                                                                                                                                                                                                            | ?   |     |     |     |     |     |     |     |
| *40:106                                                                                                                                                                                                                                                                            |     | 2   |     |     | 5   |     | ?   |     |
| *40:109                                                                                                                                                                                                                                                                            | ?   |     |     |     |     |     |     |     |
| *40:117                                                                                                                                                                                                                                                                            | ?   | 2   |     |     | 5   |     |     |     |
| *41:04, 41:10, 45:01-45:05, 45:07-45:11, 49:02, 50:01:01-50:02, 50:04-50:09                                                                                                                                                                                                        | 1   |     |     |     |     |     |     |     |
| *41:08                                                                                                                                                                                                                                                                             | 1   |     |     |     | 5   |     |     |     |
| *42:02                                                                                                                                                                                                                                                                             |     |     |     |     |     |     | 7   |     |
| Well No.                                                                                                                                                                                                                                                                           | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |

| 215 | 240 | 170 | 120 | 135 | 100 | 140 | 120 | Length of spec.<br>PCR product(s)                                                                                                                                                                                                                                                  |
|-----|-----|-----|-----|-----|-----|-----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |     |     |     |     | 250 | 435 |     |                                                                                                                                                                                                                                                                                    |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                           |
|     |     |     |     |     |     |     |     | *40:10:01-40:10:02, 40:21-40:22N, 40:33, 40:38, 40:42-40:43, 40:46-40:47, 40:49, 40:54-40:55, 40:61, 40:63, 40:67, 40:74, 40:76, 40:81, 40:84, 40:87-40:88, 40:100-40:102, 40:112-40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:132, 40:134-40:135, 40:137, 40:141 |
|     | 10  |     |     | 13  |     |     |     | *40:11:01-40:11:02, 40:19, 40:26-40:27, 40:29, 40:37, 40:50, 40:53, 40:56-40:58, 40:64, 40:75, 40:78, 40:82, 40:86, 40:90, 40:93, 40:95-40:96, 40:99, 40:103-40:104, 40:107, 40:110-40:111, 40:115, 40:119, 40:127, 40:129, 40:133Q, 40:145                                        |
|     |     | 11  |     |     |     |     |     | *40:12                                                                                                                                                                                                                                                                             |
|     |     |     |     | 13  |     |     |     | *40:14:01-40:14:03, 40:121, 40:136                                                                                                                                                                                                                                                 |
| 9   |     |     |     | 13  |     |     | 16  | *40:15                                                                                                                                                                                                                                                                             |
| 9   |     |     |     | 13  |     |     | 16  | *40:16                                                                                                                                                                                                                                                                             |
|     |     |     |     |     |     |     | 16  | *40:23                                                                                                                                                                                                                                                                             |
|     |     |     |     |     |     |     |     | *40:25, 40:69, 44:31                                                                                                                                                                                                                                                               |
|     | 10  |     |     | 13  |     |     |     | *40:28                                                                                                                                                                                                                                                                             |
|     |     |     |     |     |     |     |     | *40:30, 40:34                                                                                                                                                                                                                                                                      |
|     |     |     |     |     |     |     |     | *40:31, 40:45, 40:80                                                                                                                                                                                                                                                               |
| 9   |     |     |     |     |     |     | 16  | *40:32, 40:98                                                                                                                                                                                                                                                                      |
|     | 10  |     |     | 13  |     | 15  |     | *40:35, 40:71                                                                                                                                                                                                                                                                      |
|     |     |     |     |     |     |     |     | *40:36, 40:48                                                                                                                                                                                                                                                                      |
|     | 10  |     |     |     |     |     |     | *40:51                                                                                                                                                                                                                                                                             |
|     |     |     | 12  |     |     |     |     | *40:52                                                                                                                                                                                                                                                                             |
|     |     |     | 12  |     |     |     |     | *40:59                                                                                                                                                                                                                                                                             |
|     |     |     |     |     |     |     |     | *40:62, 40:65, 40:108                                                                                                                                                                                                                                                              |
|     |     |     |     | w   |     |     |     | *40:72:01-40:72:02                                                                                                                                                                                                                                                                 |
|     |     |     |     | w   |     |     |     | *40:77                                                                                                                                                                                                                                                                             |
|     | 10  |     | 12  | 13  |     |     |     | *40:83                                                                                                                                                                                                                                                                             |
|     | 10  |     |     |     |     |     |     | *40:85, 40:91-40:92, 40:130                                                                                                                                                                                                                                                        |
|     | 10  |     |     | 13  | 14  |     |     | *40:105                                                                                                                                                                                                                                                                            |
|     |     |     |     |     |     |     |     | *40:106                                                                                                                                                                                                                                                                            |
|     | 10  |     |     | 13  |     | ?   |     | *40:109                                                                                                                                                                                                                                                                            |
|     |     |     |     |     |     | ?   |     | *40:117                                                                                                                                                                                                                                                                            |
|     |     |     |     |     |     |     |     | *41:04, 41:10, 45:01-45:05, 45:07-45:11, 49:02, 50:01:01-50:02, 50:04-50:09                                                                                                                                                                                                        |
|     |     |     |     | 13  |     |     |     | *41:08                                                                                                                                                                                                                                                                             |
|     |     |     | 12  | 13  |     |     |     | *42:02                                                                                                                                                                                                                                                                             |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                                                                                                                                                                                                                                                                           |

| Length of spec.                        | 385 | 145 | 175 | 150 | 285 | 90  | 385 | 85  |
|----------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| PCR product(s)                         |     |     |     |     |     | 170 |     | 225 |
|                                        |     |     |     |     |     | 285 |     |     |
| Well No.                               | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| *42:09                                 |     |     |     |     |     |     | 7   |     |
| *44:18, 49:01:01-49:01:02, 49:04-49:10 | 1   |     |     |     |     |     |     |     |
| *46:06                                 |     | 2   |     |     | 5   |     |     |     |
| *49:03                                 | 1   |     |     |     |     |     |     |     |
| *51:75                                 |     |     |     |     |     |     |     |     |
| *52:16                                 |     |     |     |     |     |     |     |     |
| *73:01-73:02                           |     |     |     |     |     |     | 7   |     |
| *81:01, 81:03-81:05                    |     | 2   | 3   |     |     |     |     |     |
| Cw*0738                                |     |     |     |     | 5   |     |     |     |
| HLA-B allele                           |     |     |     |     |     |     |     |     |
| Well No.                               | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |

<sup>1</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B\*48 SSP subtyping.

In addition, wells number 2 to 4, 11 and 15 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

<sup>2</sup>The nucleotide position, in the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>3</sup>The nucleotide position, in the 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>4</sup>The B\*48 primer set cannot separate the B\*48:06 and B\*81:02 alleles. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B\*81 kits.

<sup>5</sup>The B\*48:09 and B\*48:11 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 14.

<sup>6</sup>The B\*48 primer set cannot separate the B\*48:10, B\*08:17, B\*08:54 and B\*42:11 alleles. These alleles can be distinguished by the HLA-B low resolution and/or HLA-B\*08 and HLA-B\*42 kits.

<sup>7</sup>The B\*48 primer set cannot separate the B\*48:13 and the 38:03, 39:02:01-39:02:02, 39:08 and 39:13:01-39:13:02 alleles. The B\*48:13 allele can be distinguished from the B\*38:03 and B\*39:xx alleles by the HLA-B low resolution and/or HLA-B\*38/HLA-B\*39 kits.

| 215 | 240 | 170 | 120 | 135 | 100 | 140 | 120 | Length of spec.<br>PCR product(s)      |
|-----|-----|-----|-----|-----|-----|-----|-----|----------------------------------------|
|     |     |     |     |     | 250 | 435 |     |                                        |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                               |
|     |     |     | 12  |     | 14  |     |     | *42:09                                 |
|     |     |     |     |     |     | 15  |     | *44:18, 49:01:01-49:01:02, 49:04-49:10 |
|     |     |     | 12  |     |     |     |     | *46:06                                 |
|     |     |     | 12  |     |     | 15  |     | *49:03                                 |
|     | 10  |     |     | w   |     |     |     | *51:75                                 |
|     | 10  | 11  |     | 13  |     |     |     | *52:16                                 |
|     |     |     | 12  |     |     |     |     | *73:01-73:02                           |
|     |     |     |     |     |     |     |     | *81:01, 81:03-81:05                    |
|     |     |     |     |     |     |     |     | Cw*0738                                |
|     |     |     |     |     |     |     |     | HLA-B allele                           |
| 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | Well No.                               |

<sup>8</sup>Primer mix 6: Specific PCR fragment of 90 bp in the B\*48:20 allele. Specific PCR fragment of 170 bp in the B\*48:05 allele. Specific PCR fragment of 285 bp in the B\*48:21 and in the B\*27:36 alleles.

Primer mix 8: Specific PCR fragment of 85 bp in the B\*48:16 allele. Specific PCR fragment of 225 bp in the B\*48:07 and 48:17 and in the B\*07:78, 07:115, 40:36, 40:48 and 40:77 alleles.

Primer mix 14: Specific PCR fragment of 100 bp in the B\*48:09 and 48:14 and in the B\*07:09, 07:11, 07:17, 08:28, 08:35, 08:37, 15:07:01-15:07:02, 15:55, 15:68, 15:126, 18:14, 35:05:01-35:05:02, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 35:114, 40:03, 40:105, 42:09, 46:12, 53:14 and 58:18 alleles. Specific PCR fragment of 250 bp in the B\*48:11 allele.

Primer mix 15: Specific PCR fragment of 140 bp in the B\*48:12 and 48:14 and in the B\*07:68:01-07:68:02, 07:100, 14:05, 14:13, 15:07:01-15:07:02, 15:45, 15:55, 15:68, 15:126, 18:14, 27:32, 35:05:01-35:05:02, 35:22, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 39:03, 39:14, 39:24, 39:29, 39:37, 40:35, 40:71, 42:10, 44:54, 44:106, 46:12, 51:64, 53:14 and 58:18 alleles. Specific PCR fragment of 435 bp in the B\*48:18 and in the 07:36, 07:38, 07:81, 08:03, 08:52, 38:01:01-38:01:04, 38:05-38:07, 38:09-38:14, 38:16, 38:20-38:22, 40:109<sup>?</sup>, 40:117<sup>?</sup>, 44:18, 49:01:01-49:01:02 and 49:03-49:10 alleles. Specific PCR fragment of 140 and 435 bp in the B\*38:19 allele.

‘w’, might be weakly amplified.

‘?’, nucleotide sequence information not available for the primer matching sequence.

[illegible]

## CERTIFICATE OF ANALYSIS

### **Olerup SSP® HLA-B\*48 SSP**

**Product number:** 101.546-06 – including Taq polymerase  
**Lot number:** 44K  
**Expiry date:** 2012-September-01  
**Number of tests:** 6  
**Number of wells per test:** 16

#### **Well specifications:**

| Well No. | Production No. | Well No. | Production No. |
|----------|----------------|----------|----------------|
| 1        | 2009-625-01    | 9        | 2010-761-09    |
| 2        | 2006-206-02    | 10       | 2010-761-10    |
| 3        | 2007-336-03    | 11       | 2010-761-11    |
| 4        | 2009-625-04    | 12       | 2010-761-12    |
| 5        | 2009-625-05    | 13       | 2010-761-13    |
| 6        | 2010-761-06    | 14       | 2010-761-14    |
| 7        | 2009-625-07    | 15       | 2009-625-15    |
| 8        | 2009-625-08    | 16       | 2009-625-16    |

The specificity of each primer solution of the HLA-B\*48 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 6 and 8 were available. The specificities of the primers in these primer solutions were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. In primer solutions 6, 8 and 11, one or two 5'-primers were not possible to test, and in primer solution 14 two 3'-primers were not possible to test. Additional 5'-primers in primer solutions 5, 12 and 14 were tested by separately adding an additional 3'-primer, and one additional 3'-primer in primer solution 12 was tested by separately adding an additional 5'-primer.

**Results:** No false positive or false negative amplifications were obtained.

**Date of approval:** 2010-October-01

**Approved by:**

**Quality Control, Supervisor**

## Declaration of Conformity

**Product name:** Olerup SSP® HLA-B\*48  
**Product number:** 101.546-06  
**Lot number:** 44K

**Intended use:** HLA-B\*48 high resolution histocompatibility testing

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**Phone:** +46-8-717 88 27  
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We, Olerup SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at Olerup SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

The Authorized Representative located within the Community is: Olerup SSP AB.

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Saltsjöbaden, Sweden  
2010-October-01

Olle Olerup  
Managing Director







Lot No.: **44K**

Lot-specific information

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